UNIVERSITY OF GONDAR
COLLEGE OF MEDICINE AND HEALTH SCIENCE
DEPARTMENT OF MIDWIFERY

EVIDENCE BASED INTRAPARTUM PRACTICE AND ASSOCIATED FACTORS AMONG OBSTETRIC CARE PROVIDERS IN AMHARA REGIONAL STATE REFERRAL HOSPITALS, NORTHWEST ETHIOPIA, 2015.

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APPROVED BY THE EXAMINING BOARD

As fellow of the examining board of final master's thesis defense, we have evaluated this thesis work and declared that it was accepted as a partial fulfillment for the degree of master in clinical midwifery.

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Acronyms and Abbreviations

AOR – Adjusted Odds Ratio

CI – Confidence Interval

EBP – Evidence based practice

OR – Odds Ratio

WHO –World Health Organization

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Abstract

Introduction: The World Health Organization stated that 'child birth is a normal process and in normal birth, there should be reason to interfere with' and encouraged practices that are ostensibly supported by evidences. The practice encouraged includes utilization of partograph, liberal use of episiotomy, avoiding enema, routine manual exploration of the uterus. Many of strategies have been suggested; nevertheless, evidence for concrete effectiveness of these remains indecisive.

Objective: The study was aimed to assess proportion of evidence based intrapartum care and associated factors among obstetric care providers in Amhara National Regional State Referral Hospitals, Northwest Ethiopia, 2014.

Methods: An institution based cross sectional study was undertaken from April to May 2014 among obstetric care providers in Amhara Regional State Referral Hospitals. All the available 214 obstetric care providers were taken. The data were collected using a structured self-administered questionnaire. Epi InfoTM 7.1.4, and SPSS Version 20 computer software packages were computed to enter, and analyze the data respectively. Binary logistic regression was used to identify factors associated with intrapartum care. Variables with a Bivariable *P* value less than 0.20 was fitted in to multivariable models. Finally, Odds Ratio (OR), with 95% confidence interval (CI) was used to note the strength of association.

Results: The study revealed that the overall magnitude of evidence based intrapartum care among obstetric care providers in Amhara Regional State referral hospitals was 38.20% (95%CI=32.9%, 47%). Not using health information for teaching (AOR=3.50, 95%CI=1.30, 9.40), training on evidence based practice (AOR=4.52, 95%CI=1.61, 12.71), Adequate knowledge (AOR=5.30, 95%CI=2.01, 13.90), and favorable attitude (AOR=3.34, 95%CI=1.30, 8.60) were significantly associated with evidence based intrapartum practice.

Conclusion: The current practice of intrapartum care among obstetric care providers in Amhara Regional State referral hospitals is low. Not using health information for teaching, Training on evidence based practice, knowledge, and attitude were factors statistically associated with evidence based intrapartum practice.

Recommendation: Call attention of the Regional health bureau and Stakeholders building knowledge and improving attitude of obstetric care providers through training on evidence based practice.

Key words: Evidence based intrapartum, Referral hospitals, and obstetric care provider.

1. Introduction

1.1 Statement of the problem

One out of six woman died attributed to childbirth during her life time. This has counted on the poorest parts of the world compared with one in 30, 000th in the Western(1). Most global maternal and newborn deaths are avoidable with quality health care provision (2). It suggests that such an intrapartum-care package can bring maternal mortality below 200 per 100 000 live births(3). A large proportion of all maternal deaths take place in hospitals. (4). More precisely, near to 300, 000 pregnancy and childbirth related maternal death occurring each year has been dragging the world from achieving the 5th MDG (Millennium Development Goal)(5). Besides, the one in 10 early neonatal deaths in Sub-Saharan Africa, best be prevented investing on maternal care during the first 24 hours after birth, mainly in labor and delivery(5). An intrapartum related 1.2 million neonatal deaths each year(6), could be prevented through an effective and low cost intrapartum care linked with training on evidence based essential obstetric care, both are relevant to the improvement of practice in maternal and neonatal morbidity and mortally(4, 6). To counteract maternal and newborn death ;therefore, intrapartum-care is the likely tactic given principally based on timely and competent care which demanded on advance by women(1).

After Government of Ethiopia launched HSDP IV(Health Sector Development Program IV), there was a generous progress in the number of women who gave birth at health institution(7). Over 3 years, the percentage of women giving birth at health facility was increased by 50 percent in 2014 from 10 percent reported in 2011, and in Amhara region remains plateau with 10.2% coverage. While nationwide, percentage of deliveries attended by skilled health personnel has increased form 16.8%in 2010 to 41% in 2014(7). Delivery assisted by skilled provider is in fact the most important factor in reducing maternal mortality(7-9). Recent analysis on emergency obstetrics has showed that obstetric care providers had insufficient knowledge and poor skill of diagnosing PPH(Post-Partum Hemorrhage) and birth asphyxia(10). In fact, evidence based decision making has been advocated to bring about quality of health services. Therefore, this study aimed to assess proportion of evidence based labor and delivery practice and associated factors among obstetric care providers in Amhara Regional State Referral Hospitals was done.

1.2. Literature review

1.2.1 Magnitude of evidence based intrapartum practice

Of an estimated 166, 000 deaths from hemorrhage globally each year, an estimated half occur in sub-Saharan Africa. Whether or not a woman dies from bleeding during or after childbirth depends largely on access to timely and competent obstetric care. In fact, women who received midwife led care were 21% less likely to have a fetal loss before 24 weeks' gestation, 14% less likely to have instrumental birth, 18% less likely to have an episiotomy, and significantly more likely to have a spontaneous vaginal birth(1, 11).

A cross-sectional study from Sweden reveals a 22.7% proportion of using evidence in intrapartum care(12), while 78% of women had received care concordant with evidence in Iranian social security hospital(13). Another institution based study in California reported that 74.4% of women had received an evidence based intrapartum care (14). In addition, a hospital based survey done in Brazil discovered a less than 50% utilization of evidences to assist child birth(15). A multi country study done in has shown different magnitude of intrapartum practice over countries (Benin 70.1%, Ecuador 77.6% and Rwanda 65%)(16).

An observational study done in Cali, Colombia revealed that beneficial practices like active management of third stage of labor and freedom of position were around 45%(17), while Argentinian practiced Active Management of First Stage of Labor in 93.5%(18). Gentle controlled cord traction results in minimal but significant reduction in the risk of postpartum hemorrhage or blood loss ≥ 500 ml and the risk of maternal death or serious maternal morbidity are minimal(19, 20). The magnitude were varied in middle and low-income countries; for instance, a multicenter study done in tertiary hospitals in Arab found that 60% in Egypt, 82% in Lebanon, and 73% in Syria, allows freed of movement during labor(21).

Moreover, there was a significant decrease in the rate of caesarian section, and increased demand for augmentation and induction up on admission (22). An interventional study done in India, pointed out that the rate of partograph utilization was 11%(23), the finding from Addis Ababa is 44%(10). Further, a systemic review from cochrane group indicated that use of WHO(World Health organization) partograph has decreased rate of cesarean section, instrumental delivery, oxytocin requirement(24). Labor support or labor companionship has been practiced less than 15% in Colombia(17), Lebanon 73%(25). In fact, a trial from Iran

appeared that the presence of a support person during labor decrease length of labor and improved labor outcomes(26). Besides, a systemic review also reported that women with support during labor were more likely to have spontaneous vaginal birth than the comparison group (27). A hospital based survey from Brazil showed a 46.3% rate of utilization of maternal mobility(15), another systemic review on maternal mobility during labor indicates that walking and upright positions in the first stage of labor reduce the duration of labor and risk of caesarean birth(28, 29).

A systemic review from ACOG(American College of Obstetrics and Gynecology) pointed out that the single most important clinical benefit of delayed cord clamping is the possibility for a nearly 50% reduction in intraventricular hemorrhage preterm infant(30), with including increased blood volume, but timing for cord clamping is yet to be decided(31, 32). A multidisciplinary study in Egypt indicated that 32% laboring women picked oral fluid as pain relief (31). Nevertheless, an evidence from Jordanian public hospital appeared that 96% of women kept fasting with Intra-venous rehydration (33). An evidence from systemic review on effect of IV fluid over oral rehydration added that duration of labor could be reduced with a 250ml/hr. infusion rate(34).

An interventional study done in India indicates that episiotomy was done routinely 77%(23), and 54% in Indonesia(35) which are beyond the 10% rate grounded by WHO(36). In fact, restrictive episiotomy found to be helpful in reducing the risks severe perineal trauma, suturing and healing complications by 19%(37). The rate of perineal tear could be decreased with perineal support(38), indeed, warm compresses on the perineum is associated with a decreased occurrence of perineal trauma(39). A metha-analysis done over 2900 women revealed that delayed cord clamping was associated with increased hematocrit level in term infants, which didn’t proven with quality evidence. Therefore, cord clamping remains individualized(32).

1.2.2 Magnitude of evidence based non-beneficial intrapartum practices

An interventional study done in India found that routine enema, pubic shaving, vaginal packing and fundal pressure were performed in 18%, 23%, 48% and 48% respectively(23). A multi-center study in Arab states discovered that enema, pubic shaving were practiced 90% in Egypt, 77% in Lebanon, 5% in Syria(21). A systemic review from the cochrane database

signifies that vigorous fundal pressure has no role in improving maternal and neonatal morbidity and birth outcome rather predispose for a potential risks uterine rupture, anal sphincter damage(40). Evidence showed that applying fundal pressure during the second stage of labor has a role to prolong its duration, and the risk of severe perineal trauma (40).

In addition, a multicenter study on evidence based child birth in Islamic states prevailed that routine manual exploration of the uterus was performed 11% rate in Egypt, 9.9% in Syria(21). While a hospital study in Jordan exhibited that frequent vaginal examination was done in 89% of the time. Prin's and his colleagues has reviewed systematically the effect of spontaneous pushing effort during second stage of labor versus Valsalva pushing technique and found that women in the spontaneous pushing group had a mean duration of the second stage of 121.4 minutes(41).

1.2.3 Factors associated with evidence based intrapartum practice

1.2.3.1 Socio-demographic factors

A study from Kuwait reported that clinician's awareness and experience were statistically associated with evidence based practice, where specialists had better understanding about EBP (Evidence based practice) than General practitioners. While health care providers having had less than 8 years of clinical experience had better awareness than seniors(42). An interview based Australian study noted that participants with lesser age had better sources of health information, where internet were the most(43). A multi-institutional Californian study reveals age, profession, and qualification, and current position of care providers (44, 45), including sex, age, qualification, employment status were associated with evidence based practice(46). An institution based cross-sectional study from Cameroon found out that age, sex, profession, and experience were associated with evidence based intrapartum care (47).

Several studies have shown that age, sex, profession, qualification, experience, access to internet, workshop, conferences, searching for the cochrane database, World health organization's reproductive health database, role clarity, use of journals were statistical associated with evidence based practice(23, 48-50). A study in Austria signifies that diploma nurses were likely to attended courses on evidence-based practice(51).

1.2.3.2 Organizational related factors

Organization was considered as a significant factor for evidence based related information(52). In addition, managerial support, access to research findings, access to internet, and support from colleagues were discovered factors with a strong statistical significance (45, 50, 53). A result from South Africa showed that more than half of academic health care practitioners were using scientific journals, textbooks, and colleagues as source of health information to improve their teaching(54). In addition, a survey from South East Asia reported that, health care providers reason for using health information were for teaching, improving patient care, and research, while textbooks, colleagues, and scientific journals were the most frequently used sources of health information(55). A research finding from Sweden depicts that role clarity, leadership, working with shifts were associated with evidence based practice(46).

Further, training, supervision, working conditions, incentives, and the integration of the programs into the health system were the major reported barriers and facilitators for utilization of evidences in to practice(56). Another survey from United Kingdom pointed out that the common source of health information to act upon EBP was colleagues, but health care practitioners who had used journal article and dissemination of EBP principles were statistically associated(57). In addition, a result from California discovered that age, experience, qualification, and position of the health care provider were statistically associated with EBP(44). Administrative support, interest', time, access to resources have been reported as factors associated with evidence uptake (44, 51). Accessibility of computers in health care setting supports health care provision and reduces medical errors and enhances health management system, could be used for internet (55, 58). Computer also provides an easy and timely access to information and enables health care providers for accurate and complete documentation (59).

1.2.3.3 Individual related factors

A cross-sectional survey from England added that seniors' nurses were more likely to use formal form of health information sources than juniors which was gained through scientific journals, auditing and internet(52), whereas reading research findings, applying research for

daily clinical practice were also significantly associated with evidence based care (53). A Croatian finding showed that Searching for and use of the Cochrane database were statistically associated with evidence based practice (50). Knowledge and attitude were also found to be statistically associated with evidence based practice (44). A cross-sectional fining from Sweden added that EBP related training, individual capacity of EBP were associated with evidence based practice(46). Health training, journal use, awareness and use of WHO reproductive health library, and knowledge were statistically associated with evidence based intrapartum care from a quantitative results of Cameroonian study (47). Further, a cross-sectional study from Italy reported that EBP training, knowledge, and attitude were significantly associated with utilization of randomized controlled trials (45).

.A study done in South Africa demonstrates that about 80% and 48% of academic health practitioners strongly agreed that there is a solid need to incorporate EBP into teaching, and perspective of clinical success respectively(54). Another study done in the Eastern US has showed that there was a relatively high attitude of participants but lower knowledge was reported and over all, knowledge, skill, believes, having EBP mentorship, using reviews and guidelines were found to be significant in EBP and belief in the value of EBP for patient care was already high among the participants who self-selected to attend the program(60). Providing a supplementary courses in a clinical setting is useful in improving clinicians' attitudes to and perceptions of knowledge and skills related to EBP (55, 60, 61).

In order to gain knowledge through interaction in classes in basic, or further education, and reading research articles are considered. In Veeramah's survey majority of nurses and midwives expressed positive attitudes to research, and particularly statistically significant relationship was demonstrated between this and research education received (62-64).Among the highest-rated, time for innovative ideas, clinicians cooperation, authority for paradigm shift in practice were commonest factors; however, organizational factors and health care providers values, awareness and skills to be greater obstacles to research use than their clinical peer(65). A survey from Saudi Arabia indicated that health professional who had at least one seminar participation were positively associated with evidence based health care(66). As an input for intrapartum practice, therefore, this study assesses the magnitude of and factors associated with evidence based practice in Amhara regional state referral hospitals.

Conceptual framework

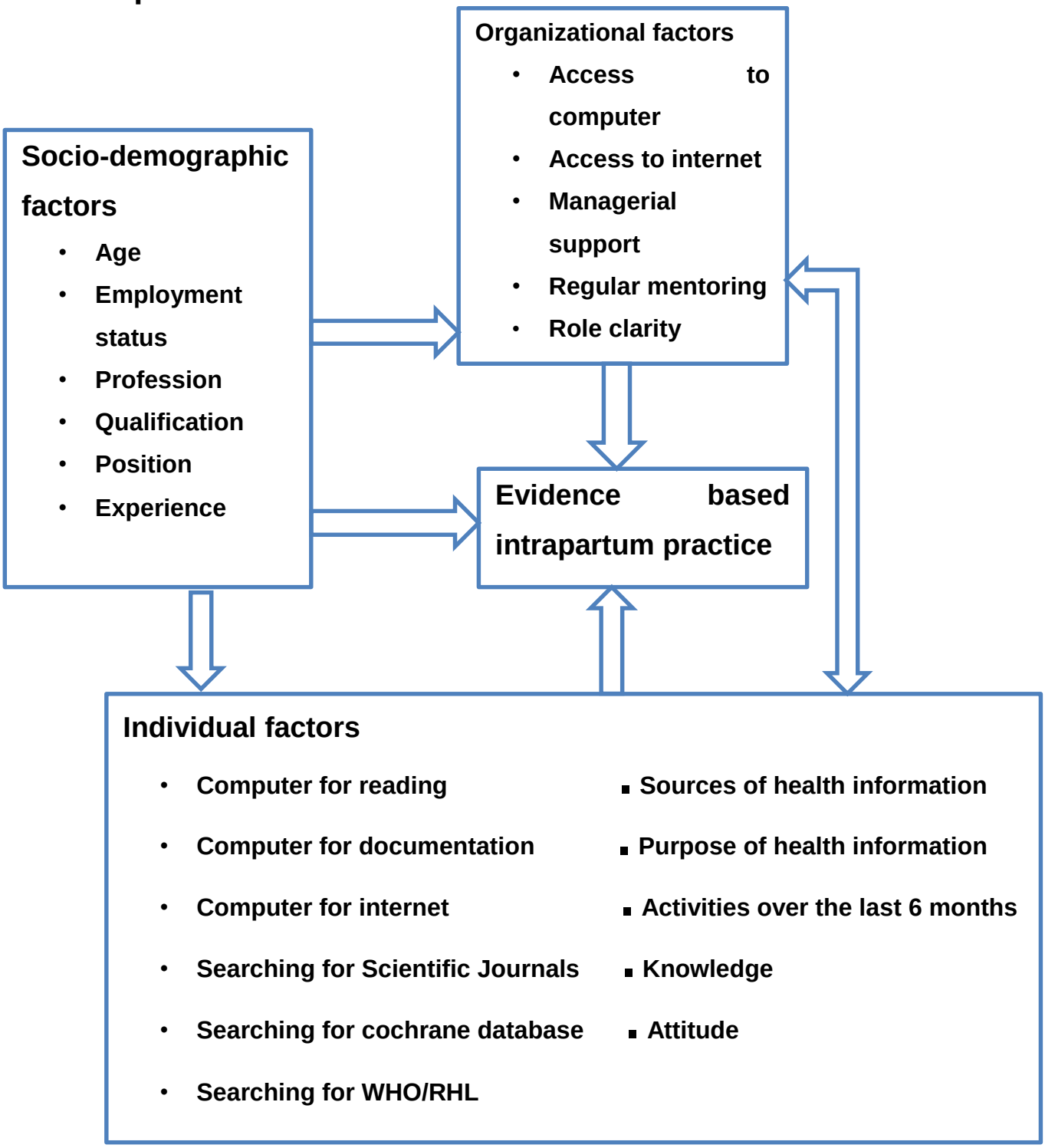

Figure 1: Conceptual framework showing interrelated factors associated with evidence based intrapartum practice, Amhara national regional state, North west ethiopia, 2014(46, 53, 65, 67).

1.3. Justification of the study

Significant number of maternal and neonatal death occurs during labor and delivery, especially during the first 24hours of postpartum. The enormous proportion of maternal death takes place at hospitals(1). There is no doubt that an intrapartum care given at hospitals can provide more effective packages for emergencies than health centers, in part because they can provide surgical and blood transfusion functions(4). Facility based intrapartum care has been advocated as cost effective, affordable, sustainable strategy, likely to be chosen by women which could bring about Maternal Mortality below 200 per 100,000 live births(3).

Once obstetric health care providers provide care in line with the best evidence available, room will be open for improving health care quality so that problems related with labor and delivery could be minimized. Ethiopian government made prudential effort to reduce maternal mortality from 676 per 100,000 live births to 420 per 100,000 live births over three years. But the percentage of institutional delivery by skilled health care provider in Amhara regional state reduced from 10.1% to 10%(5, 8, 9).

However, as far as I concerned there are no published study done to assess magnitude of evidence based intrapartum practice and factors associated in Amhara regional state. Therefore, the results of this study may help to provide baseline information for relevant stakeholders to take judicious measures either to improve intrapartum care. It also helps to forward appropriate recommendation so that concerned authorities can contribute for the formulation of better and appropriate working environment including a stepping stone for other researches to be conducted in the future.

2. Objectives

2.1. General objective

To assess magnitude of evidence based intrapartum practice and its associated factors among obstetric care providers in Amhara National Regional State Referral Hospitals, Northwest Ethiopia, 2014.

2.2. Specific objectives

To determine the magnitude of evidence based intrapartum practice among obstetric care providers.

To identify factors associated with evidence intrapartum practice among obstetric care providers.

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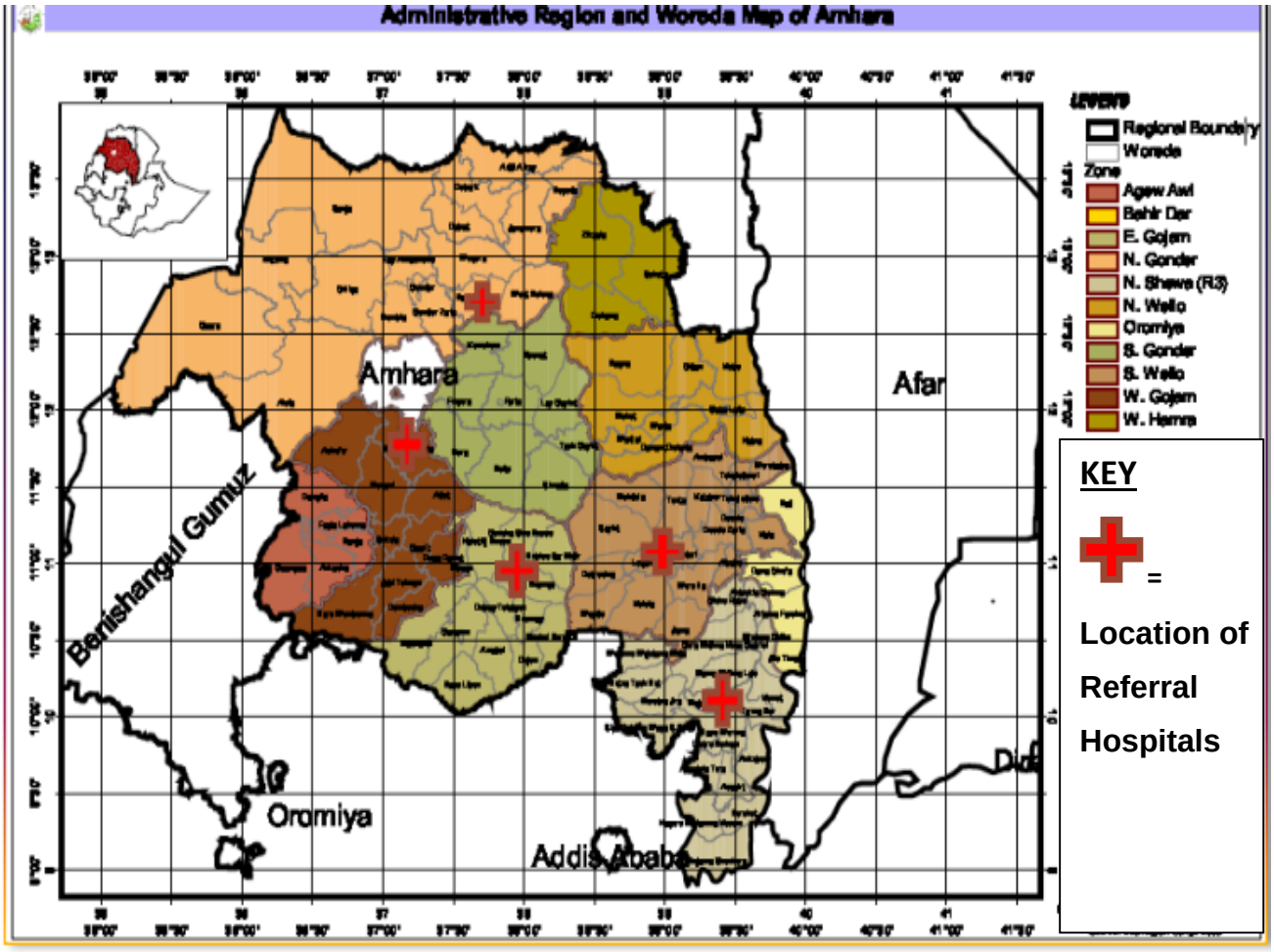
3. Methods

3.1 Study design and period

An institution based cross sectional study was conducted between April to May, 2014.

3.2 Study area

The Amhara region locates with a location of 9°-14° N and 36°-40°E in Ethiopia's Northwest. It encompasses highland (above 2,300 meters above sea level), semi-highland (1,500 to 2,300 meters above sea level) and lowland (below 1,500 meters above sea level). The region's area is about one tenth of the country's total area. The region is bordered by the nation of Sudan to the west, and the Ethiopian regions of Tigray to the north, Affar to the east, Benishangul-Gumuz to the west and southwest, and Oromia to the south. The 2012's national census reported 123 institutional maternal deaths among 87, 319 health institution deliveries. In addition, 562 neonatal deaths had stated from 84,880 total number of births attended. Distribution of health practitioners in Amhara national state includes 109 General practitioners, 46 medical specialists, 670 health officers, 4, 902 nurses, and 294 midwives. Regarding health service distribution 19 hospitals, among these 5 are referrals which includes University of Gondar Teaching Referral Hospital (UOGTRH), Felegehiwot referral hospital (FRH), Dessie referral hospital (DRH), Debremarkos referral hospital (DMRH), and Debrebirhan referral hospital (DBRH). Each hospital is assumed to be served for 5 million people, have 100-400 beds, 2000-3000 deliveries per year and 5-8 deliveries per day. 724 health centers and 3093 health posts, 360 drug stores and 134 regular drug venders found in the region. In addition, according to the 2011 FMOH report, the gross antenatal care (ANC) coverage, total deliveries by skilled attendants and postnatal care coverage were 86.2%, 13.0% and 45.9% respectively(68).



Source: http://www.dppc.gov.et/downloadable/map/administrative/Atlas_Amhara.pdf

Figure 2: The location of the Amhara National Regional State Referral Hospitals, Northwest Ethiopia, 2014.

3.3 Source population

All obstetrics care providers in Amhara national regional state referral Hospitals.

3.3.1 Study population

All obstetrics care providers who were available during the data collection period.

3.4 Inclusion and Exclusion criteria

3.4.1 Inclusion criteria

All obstetrics care providers who were available during the data collection period and had provided obstetric care over the last 12 months in Amhara national regional state referral Hospitals.

3.5 Variables of the study

3.5.1 Dependent variable

- Evidence based intrapartum practice.

3.5.2 Independent variable

- Socio-economic factors: - Age, sex, employment status, profession, qualification, position, marital status, experience.
- Organizational factors: - access to computer & internet, managerial motivation, conference, and interactive EBP skill building workshops, cooperation, regular mentoring, patient condition, role clarity, source of health information.
- Individual factors:
    - Use of computer for reading, internet, and documentation.
    - Searching for journals, Cochrane database, WHO Reproductive Health Library
    - Use of Scientific journals, textbooks, colleagues, and conference for health information source;
    - Participating on conference, training, seminar, and case-study over the last 12months.
    - Usage of health information for patient condition improvement, clinical research, and teaching purpose
    - Obstetric care provider's knowledge and attitude.

3.6 Sample size determination

The minimum sample size required was computed using a single population proportion formula with the assumption of 50% proportion, at 95% certainty and maximum discrepancy of $\pm$ 5.

Thus, the calculated sample size was:

$$ni = \frac{((Z_{\frac{\propto}{2}})^2(P(1-P))}{d^2} = \frac{((1.96)^2(0.50(1-0.50))}{0.05^2} \approx 384$$

Assumptions;

- 'p the proportion of evidence based intrapartum care =50%

- 'ni is the initial sample size
- '**z**' is a standard score corresponding to 95% confidence interval
- **'D'** is the marginal error (5%)

Hence the final minimum sample size (n) with 5% non-response rate was approximately 403.

3.7 Sampling procedure

All obstetrics care providers who were available during the data collection period and had provided obstetrical care over the last 12 months in Amhara national regional state referral Hospitals were considered study participants due to smaller number of study participants in the area. According to the annual registration of each hospital, University of Gondar Teaching Referral Hospital (UOGTRH), Felege Hiwot Teaching Referral Hospital (FHTRH), Dessie Referral Hospital (DRH), Debremarkos Referral Hospital (DMRH), and Debrebirhan Referral Hospital (DBRH) were hosting 92, 38, 42, 41, and 42 obstetric care providers.

3.8 Operational definitions

Evidence based intrapartum practice: Obstetric care provides who scored greater than or equal to the median value of practice related questions of intrapartum practice.

Obstetric care providers: A certified health personnel who provide care for the woman during labor and delivery.

Adequate knowledge: - Obstetric care provides who scored greater than or equal to the median value of knowledge related questions of intrapartum practice.

Favorable attitude: Obstetric care provides who scored greater than or equal to the median value of attitude related questions of intrapartum practice.

3.9 Data collection procedures

A structured self-administered questionnaire having five parts of socio-demographic, health related evidence, knowledge, attitude, utilization of evidence based intrapartum care was used to gather the required information. A data collector has introduced himself or herself to the hospital staff at the initial of the study. Besides, health provider's permission was taken and contact with the manager and head nurse was made also. The tool which was prepared in English was adapted from South East Asia Optimizing Reproductive and Child Health in Developing Countries Project in a way that could be convenient to the catchment area and fit with the aim of the study(69). Prior to the data collection date, 5 Data collectors were recruited

on the basis of being familiar with the same task before and well recognize the study area. The five female diploma midwife data collectors with additional responsibility of spot checking the tool on the field, daily questionnaire check for completeness. Duty of checking the daily work up and supplying the necessary material for data collection was on the shoulder of principal investigator. Besides, detailed orientation was given to data collectors.

3.10 Data quality assurance

Training was given by the principal investigator preceding the data collection for one day aimed at the purpose of the study, observation techniques, and informed written consent. A pre-test of the tool was conducted prior to the actual data collection in 5% of the sample, in Ayu General Hospitals in Debrebirhan city administration that was not included in the study. Then, findings were discussed among data collectors so that the tool got adjusted. The whole process will be facilitated and checked thoroughly by the principal investigator. To ensure the completeness, accuracy and consistency of questionnaire regular meetings was held each day of the data collection. During these sessions thorough checking was done before receiving the filled questionnaires from each data collector, which helped to crosscheck for their performance and improving proper data collection. Problems faced, errors committed during the time of data collection were also discussed and a decision was reached. If respondents were not there during the data collection time, three additional visits were done.

3.11 Data processing and analysis

The collected data were edited, coded and entered using Epi-Info version 7.1.2.0 computer package. Then, it were exported to SPSS (Statistical package for Social Sciences) version 20 for analysis. Frequencies and percentages of the responses were also used. Binary logistic regression was used to identify factors associated with intrapartum care. Variables with a bivariable *P* value less than 0.20 was fitted in to multivariable models for controlling the possible effect of confounders. Finally, the variables which had significant association with evidence based intrapartum care were identified on the basis of adjusted Odds Ratio (AOR), with 95% confidence interval (CI) and p-value ≤ 0.05. The variables were entered to the multivariable logistic model using the Backward Stepwise (Likelihood Ratio) method.

4. Ethical consideration

Project approval was obtained from ethical review committee of University of Gondar College of medicine and health science, Department of Midwifery prior to the data collection has carried out. In addition, official letter of cooperation was given to each ARS (Amhara regional states) referral hospitals following discussion of the study objectives. An informed oral consent was also obtained concerning the aim of the study, risks and benefits, confidentiality issues, including withdrawal of any time they want to stop. Moreover, participants were assured that they had the right to withdraw from the study at any time they wish to leave. In fact, they were also being told as it had no place to affect their duty being given.

5. Results

5.1 Rate of selected socio-demographic factors

A total of 212 obstetric care providers from the five referral hospitals in Amhara region were included with a 97.64% response rate. The median age of participants was 29 (IQR±4). Out of the total 207 respondents 116(56%) of them were male respondents. More than three fourth of respondents were working for full time in their respective hospital. The majority 106(51.20%) participants were midwives followed by 55(26.60%) medical doctors. The proportion 78(37.68%) and 74(35.75%) were Diploma and BSc's holders respectively (see table 1).

Table1: Socio-demographic response of obstetric care providers in Amhara regional state referral hospitals, Northwest Ethiopia, 2014(n=207).

S.No.	Variables	Frequency(n=207)	Percent (100%)
01	**Age(yrs.)**		
	Less than 25	18	8.70
	25 to 30	133	64.30
	Above 30	56	27.10
02	**Marital status**		
	Single	127	61.40
	Married	80	38.60
03	**Employment status**		
	Fulltime	169	81.60
	Part-time	38	18.40
04	**Profession**		
	Medical doctor	55	26.60
	Health officer	38	18.40
	Midwife	106	51.20
	Nurse	8	3.90
05	**Qualification**		
	Specialist	7	3.38
	Master of science	6	2.90
	General practitioners	42	20.29
	Bachelor of science	74	35.75
	Diploma	78	37.68

Further, only 90(43.50%) of respondents were clinicians as compared to 117(56.50%) subjects who had engaged in both academic and clinical activities. Among the entire respondents, only 16(7.80%) had been working in labor and delivery ward for more than 10 years. Around quarter of participants were who have had obstetric associated working

experience between 5 to 10 years. More than half of respondents had less than 5 years obstetric linked working experience.

5.2 Organizational and individual related factors

More than sixty percent of subjects had computer access at their work place. Among those who had access to computer around near to the three fourth values were using computer for reading. Indeed, the remaining 85(68.0%), and 35(28.00%) used a computer to access internet and patient related data documentation. The amount 146(70.50%) represents those who had access to internet at their work place. About sixty four percent respondents were searching on internet for social networks followed by 81(55.86%) respondents who searched for online health related journals (Figure 4).

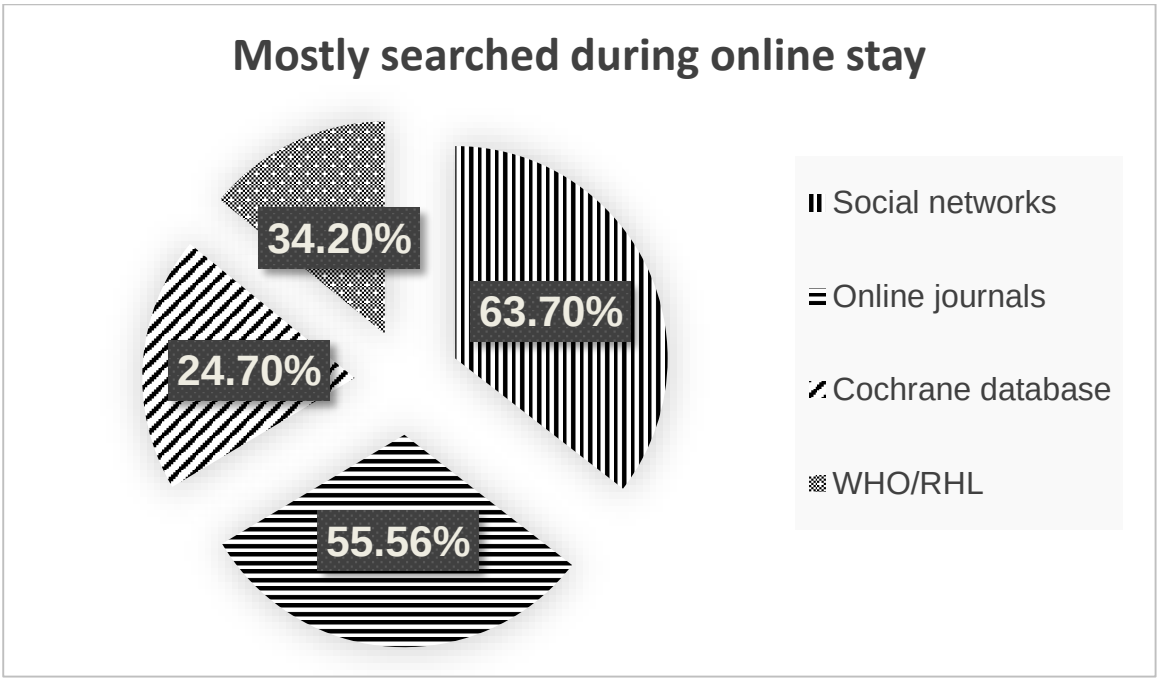


Figure 3: Obstetric care providers mostly searched for during online stay in Amhara regional state referral hospitals, Northwest, Ethiopia, 2014(n=145).

The vast majority 167(80.70%) were using text book either in addition or without an internet. Among the total 207 participants, 92(44.40%), 51(24.60%), and 38(18.4%) were confirming that they have been using health related journals, colleagues and conferences as source of health information respectively. An evidence based seminar participation leads the overall respondents with a 56.5% magnitude followed by those who took workshop (see figure 5).

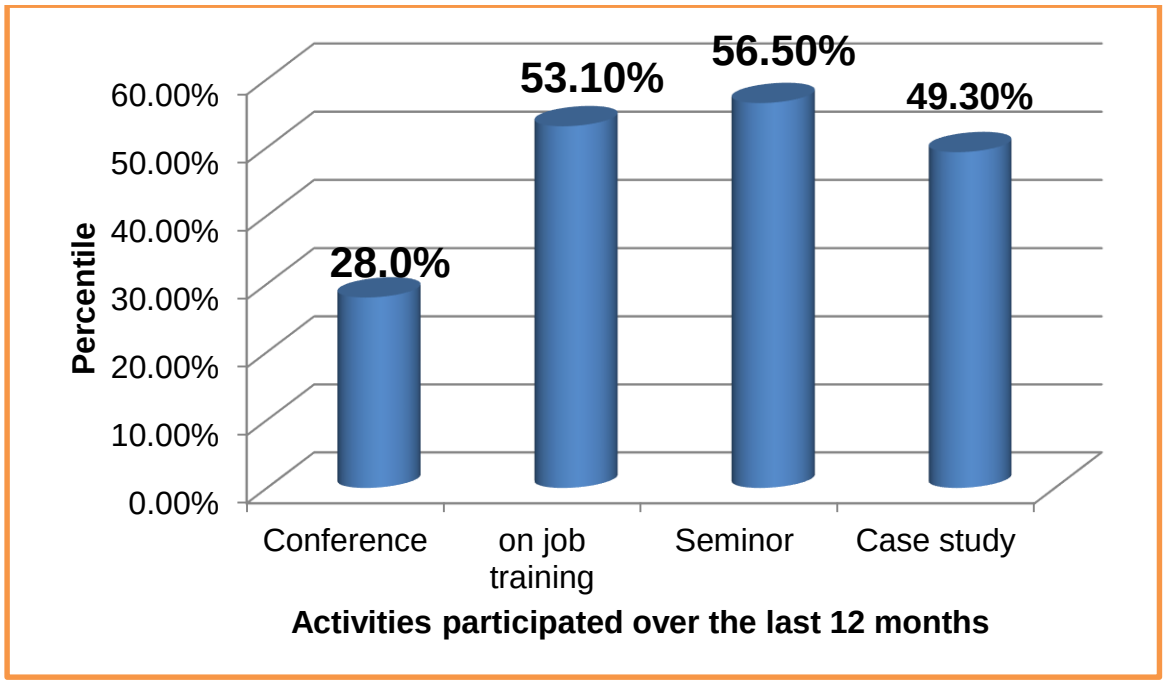


Figure 4:Obstetric care providers who had activities related to evidence based practice in Amhara national referral hospitals, Northwest, Ethiopia, 2014(n=207).

Only 85(41.10%) said managerial role did motivated them to utilize evidences in to intra-partal practices. Patient condition was the leading motivator for participants with a 132(63.80%) response compared to 108(52.2%), 82(39.60%), 73(35.30%), and 65(31.40%) of whom motivated by evidence based related workshop, Staff cooperation, regular mentoring, and role clarity correspondingly. The majority 167(80.70%) of participants were using health information to improve patient care. From the total subjects, 97(46.9%) and 62(30%) were using for teaching and research purposes. Forty five percent of respondents were adequate knowledge (Median=16, 95%CI). However, the majority 114(55.10%) were found to have inadequate knowledge. Those who had favorable attitude towards an evidence based intrapartum care were 84(40.60%) compared to the remaining 123(59.4%) who had poor attitude towards evidence based intrapartum care.

5.3 Magnitude of evidence based intrapartum practice.

The overall magnitude of evidence based intrapartum care among obstetric care providers in ARS referral hospitals was 38.20% (95%CI=32.9%, 47%). Active third stage of management was done in about 93.20%, while episiotomy accounts 60.4%. The majority 77.3% of obstetric care providers were using partograph during first stage of labor (see figure 5).

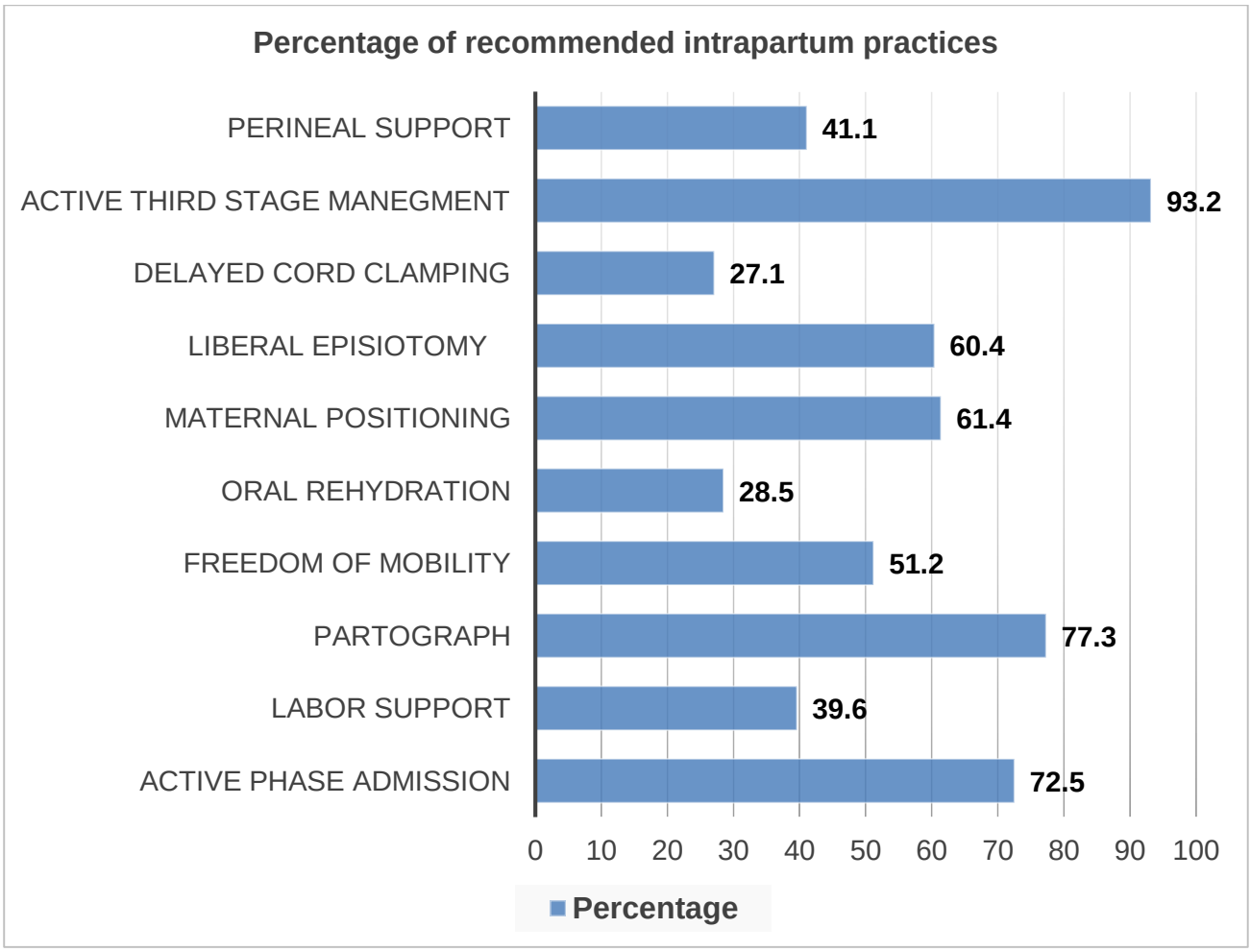


Figure 5: Percentage of recommended practices performed by obstetric care providers in Amhara regional state referral hospitals, Northwest Ethiopia, 2014.

Obstetric care providers were using fundal pressure in about 53.1% during second stage. About forty seven percent of obstetric care providers' were responded that they had done perineal shaving during labor. Frequent vaginal examination less than 4hours during labor was performed in 44.4% by obstetric care providers (see figure 6).

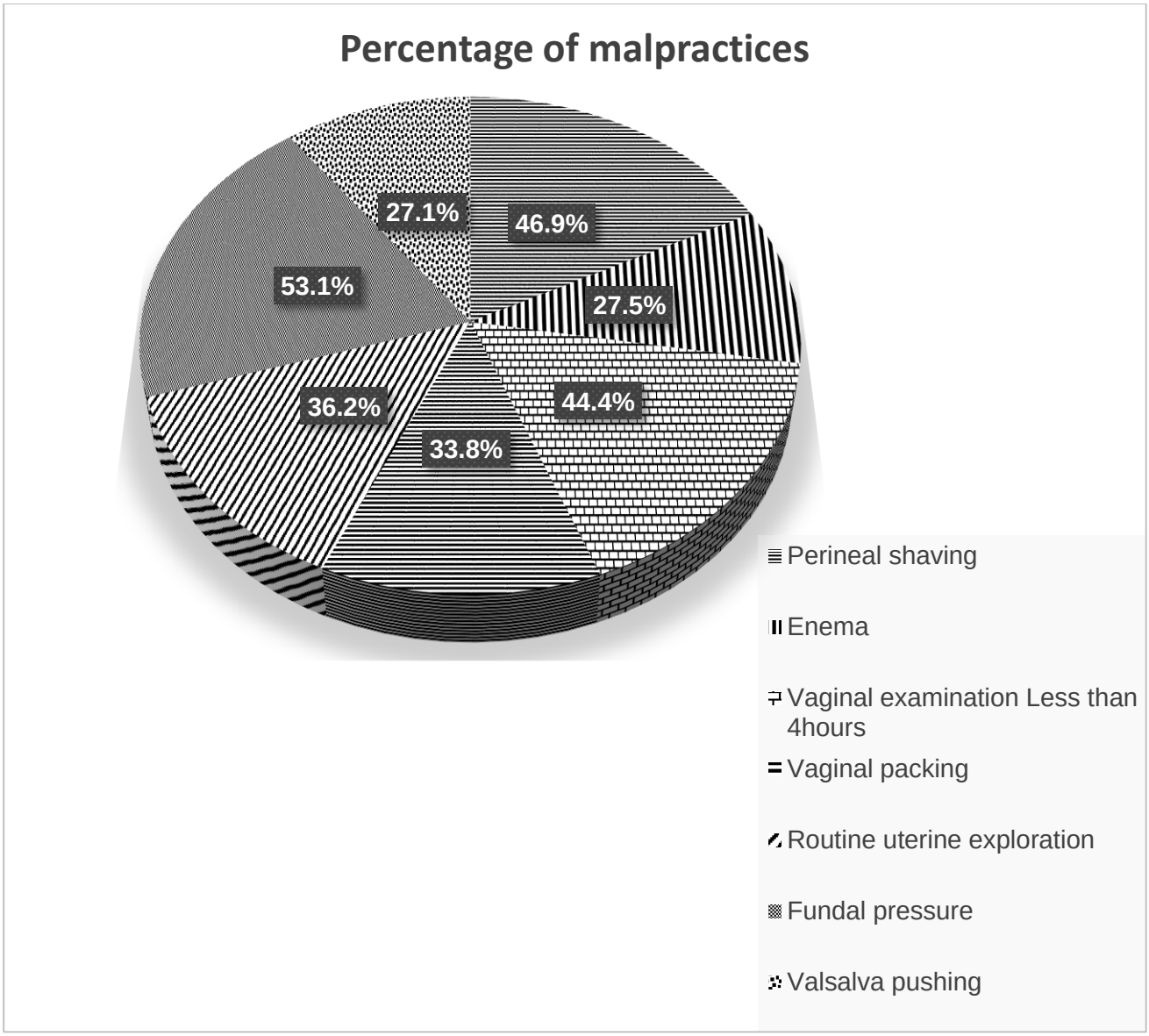


Figure 6: Percentage of malpractices done during intrapartum by obstetric care providers in Amhara regional state referral hospitals, Northwest Ethiopia, 2014.

5.4 Factors associated with intrapartum evidence based practice.

Multivariable logistic regression showed that on job training on evidence based practice, not using health information for teaching purposes, knowledge, and attitude were significantly associated with evidence based intrapartum care.

Obstetric care providers who had taken training on evidence based practice were about 4.5 times more likely to perform an intrapartum care in agreement with best evidence available (AOR=4.5, 95%CI=1.61, 12.71) than those who hadn't. Participants who failed to use health information for teaching purpose were about 4 times more likely to put evidence in to

intrapartum practice than who had used(AOR=3.50, 95%CI=1.30, 9.40). In addition, having adequate knowledge about evidence based intrapartum care leads to more than 5 fold increase in utilization of intrapartum specific evidences in to practice(AOR=5.30, 95%CI=2.00, 13.9). Statistical association also depicted that obstetric care providers having had favorable attitude towards evidence based intrapartum care were about 3 times more likely to perform intrapartum care with evidence than the other end(AOR=3.34, 95%CI=1.30, 8.60).

Table 2: Bivariable and multivariable analysis of distribution of factors associated with evidence based intrapartal practice in Amhara regional state referral hospitals, Northwest Ethiopia, 2014.

Variables	Evidence based intrapartum care			
	Yes(n)	No(n)	COR(95%CI)	AOR(95%CI)
Qualification				
Higher	12	33	0.45(0.20, 0.98)	1.80(0.44, 7.40)
Middle	33	53	0.77(0.41, 1.44)	2.40(0.70, 8.30)
Lower®	34	42	1.00	1.00
Computer for reading:				
Yes	28	64	0.41(0.18, 0.93)*	0.86(0.28, 2.63)
No®	17	16	1.00	1.00
Scientific journals for health information source:				
Yes	29	63	0.60(0.34, 1.06)	0.57(0.19, 1.72)
No®	50	65	1.00	1.00
Colleagues for health information source:				
Yes	14	37	0.53(0.27, 1.06)	1.06(0.32, 3.53)
No®	65	91	1.00	1.00
Conference participation:				
Yes	15	43	0.46(0.24, 0.91)*	0.34(0.12, 0.99)*
No®	64	85	1.00	1.00
Training on EBP:				
Yes	50	60	1.95(1.10, 3.50)*	**4.50(1.61, 12.71)****
No®	68	29	1.00	1.00

Characteristics	Evidence based intrapartum care		COR(95%CI)	AOR(95%CI)
	Yes	No		
Seminar participation:				
Yes	37	80	0.53(0.30, 0.93)*	0.59(0.19, 1.79)
No®	42	48	1.00	1.00
Skill building workshop for motivation:				
Yes	38	72	0.65(0.40, 1.14)	0.40(0.14, 1.02)
No®	43	56	1.00	1.00
Role clarity for motivation:				
Yes	20	45	0.63(0.34, 1.17)	0.41(0.20, 1.10)
No®	59	83	1.00	1.00
Health information for teaching:				
Yes	29	68	1.00	1.00
No®	50	60	1.60(1.10, 3.50)*	**3.50(1.30, 9.40)***
Knowledge:				
Inadequate®	29	85	1.00	1.00
Adequate	50	43	3.41(1.90, 6.13)***	**5.30(2.00, 13.9)*****
Attitude				
Non-favorable®	30	93	1.00	1.00
Favorable	49	35	4.34(2.40, 7.90)***	**3.34(1.30, 8.60)*****

NB: *Higher: Specialist's, Resident's, Master of Science's; Middle: General practitioners, Bachelor of Science's; Lower: Diploma's; ***=P<0.001, **=P<0.01,*=P<0.05, ®=references.*

6. Discussion

The present study pointed out the overall proportion of obstetric care providers who were giving an intrapartum care in view of the best evidence available was 38.2%. This was lower than a multi country study done in (Benin 70.1%, Ecuador 77.6% and Rwanda 65%) (16), This might be due to difference in data collection tool and procedure, study participants, study setting. In addition, time gap and better exposure to information sources also considered, as matter of fact, obstetric care providers with better access to information tend to have better motive to put in to practice and time discrepancy might have effect to change in practice.

On the other hand, the result of current study was higher than a study done in Sweden(22.7%)(12), this might be explained by a shift in strategies from routine obstetrics to major ones towards technology oriented interventions. Perhaps, the government might be too focused in striving to reduce maternal mortality since it's the final year of millennium development yet to be achieved. Time gap, study population, data collection tool and procedure might have a role. In fact, referral teaching hospitals in Amhara regional stated have been hosting postgraduate students.

The current study is lower than study done in California (74.4%)(14), Iran (78%)(13), Brazil (50%)(15). This may be possibly due to cross cultural difference, divided loyalty, self-selection, and limited number of staffs serving in the hospital (27). Moreover, providers characteristics, additional duties other than labor, having every relatives aside each laboring mother would disturb the ward and privacy breach might be a concern. In fact, maternal rehydration is subjected to individual evaluation. It also implies that study setting, data collection tool and study participants might have role. In addition, a high case flow in referral hospitals might obscure obstetric care providers not to give due attention. Indeed, most of laboring mothers come after labor has advanced and complicated. Variation might also be due to health facility mentoring and motivation in overseas.

Factors associated with evidence based intrapartum care

On job training on evidence based practice in this study was found to be strongly associated with evidence based intrapartum care, where obstetric care providers were near to 5 times more likely to adhere to evidence based intrapartum practice than those who had no training at their institution (AOR=4.50, 95%CI=1.61, 12.71). This finding does not agree with studies in Italy (45), Sweden(46), and Cameroon(47). The discrepancy might be due to variation in study setting, study participants, data collection tool and procedure. On the other hand, variation in terms of time might have contributed since as time advances change in practice is likely. In fact, obstetric care providers having had on job training might have better motive for practice because of the insight they had from the training. In addition, since referral hospitals are training sites for BEmONC (Basic emergency obstetric and newborn care) trainees, obstetric care providers might have initiation to put new evidence in to practice.

Not using health information for teaching purposes was found to be associated with evidence based intrapartum care, while obstetric care providers who did not used health information for teaching were about 4 times more likely to perform intrapartum care concordant to best evidences than those who had used teaching purposes (AOR=3.50, 95%CI=1.30, 9.40). This does not agreed with a study done in Sweden(46). This could be, clinicians with academic base were responsible to teach students underneath them. In fact, educators spend more time teaching students than they do teaching them how to use research in practice(70). Obstetric care providers who had used health info for teaching might lack awareness how to put research findings in to clinical practice, not motivated, unsupportive working environment(71). Clinicians were more attached with patients which increase their likely to use evidence in to practice, probably due to a motive to enhance patient care. This was reflected in this study, while relatively more clinicians were using evidence into practice than those who had academic roles.

In the present study, having a favorable attitude towards evidence based intrapartum practice had a triple fold increase in evidence based intrapartum practice (AOR=3.34 95%CI=1.31, 8.60**)**. A result from Spain also showed a significant association between favorable attitude and evidence based practice(65), a study from Croatia supplemented that attitude of clinicians were significantly associated with evidence based practice (50), Italia (45) . In addition, another study from US added that practitioners having good attitude towards were significantly

associate with evidence based practice(51). The current study finding is not in agreement with the Italian study, presumably due to variation in data collection tool, procedure, study subjects, and study area. In fact, a good attitude resulted from adequate knowledge might affect evidence based intrapartum practicum. Scientific meeting and conferences might held often since most of referral hospitals are hosting postgraduate student and they are close to information other than being busy with routine practice. It is plausible that obstetric care providers exposure to such environment could change their attitude so as to foster to put evidences in to practice specially to intrapartum related ones.

Obstetric cares providers who had adequate knowledge were ahead of 5 times more likely to utilize evidences in their routine obstetric care during intrapartum practice (AOR=5.3, 95%CI=2.01, 13.90), Italian(45). The current study's result is in line with a cross-sectional study done in Cameroon (47). A multi-institutional study done in US showed that health practitioners who had adequate knowledge was statistically associated with evidence based practice(44). The reason might be due to the fact that, those who had adequate knowledge would have an increased enthusiasm to put into practice. It could also be due to various factors which contribute for increased performance. For instance, a trend which brings about change a theory in to practice like presence of role model and well-experienced practitioner, patient condition, evidence based training, workshops, and journal clubs. In addition, it also implies that acquiring adequate knowledge is a key for evidence based intrapartum practice.

7. Limitation of the study

- Lack of triangulation of certain variables to explore barriers to utilize evidences in intrapartum care and reason for ineffective performance of beneficial interventions.
- Social-desirability bias

8. Conclusions

- The current practice of intrapartum care among obstetric care providers in Amhara Regional State referral hospitals was low.
- Training on evidence based practice, not using health information for teaching purpose, provider's knowledge, and attitude were factors significantly associated with evidence based intrapartum practice.

9. Recommendations

9.1 For Amhara Regional State health bureau

- Form a linear relationship with referral hospitals and regularly supervise about their current performance on intrapartum practice.
- Invite and support obstetric care providers to participate on regional conferences, scientific meeting, and didactic presentations exclusive to evidence based intrapartum care.
- Adoption of up-to-date protocols, checklists, guidelines contemporaneous to each referral hospitals settings in harmony to Ethiopian ministry of health.

9.2 For Amhara Regional State Referral hospitals

- Feedback obstetric care providers on their performance relative to their peers or accepted guidelines.
- Found opinion leaders nominated from obstetric care providers with a role of promoting evidence based intrapartum practice.
- Accrediting obstetric care providers based on certain level of good practice achievement.

9.3 For Non-governmental organizations

- Give health promotion and information to obstetric care providers and short term on job training on principles of evidence based practice.

9.4 For Obstetric care providers

- Devote and participate in activities like conference, changing clinical guideline, seminars, and workshops combined with didactic presentation focusing on evidence based care.
- Stick to established management protocol, checklist related to intra-partum care.

9.5 For Researcher

- A qualitative study needed to investigate reason for using ineffective practices and barriers for beneficial intrapartum practices.

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Annexes

University of Gondar

College of Medicine and Health Science

Department of Midwifery

Annex one: Information sheet

Here, I the undersigned, at University of Gondar, college of Medicine and Health Science, Department of Midwifery; will be conducting a research at Amhara National Regional State Referral Hospitals, Northwest Ethiopia, 2014. For this study, you will be recruited and before getting your permission for participation, I will give you all the necessary information regarding the study. Thus, the information will be detailed as;

Purpose of the study: This study is aimed to assess predictors of evidence based labor and delivery practice among obstetric care providers in Amhara National Regional State Referral Hospitals, Northwest Ethiopia, 2014.

Participants to be included: All obstetrics care providers available during the data collection period and who gives permission will be included.

Risk: The study will be carried out by asking your permission with already prepared and structured questionnaire. There will be no physical or psychological harm during the procedure. Besides, you have full right to stop any time you wish and you won't be obliged to give any information which you don't want to answer.

Benefits: For being involved in this study, there is no payment you will be granted with and no special privilege is also given to you. Perhaps, participating and giving information for the questions being asked plays a pivotal role in the effort made to improve labor and delivery care so that maternal mortality can be reduced.

Confidentiality: Any information you give will be kept confidential and won't be accessible to any third party. Your name won't be mentioned anywhere. The information you give is only used for research purpose only and will be burnt at the end.

Consent: You participation in this study will totally be on the basis of your willingness. You can stop anywhere you wish to stop participation, even from the very beginning. No one will force you to give information you don't want to give.

Finally, I duly acknowledge your participation and either response.

Name sing date

Principal investigator: Kassahun Fikadu, _____, _____.

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University of Gondar

College of Medicine and Health Science

Department of Midwifery

Greetings!!!

Annex two: Consent form

Hello! My name is _____. Here, at University of Gondar, college of Medicine & Health Science, department of midwifery; I will be undertaking research aimed to assess proportion of evidence based labor and delivery practice and associated factors among obstetric care providers in Amhara National Regional State Referral Hospitals, Northwest Ethiopia, 2014. As part of this survey, relevant information on socio-demographic, Health information needs, knowledge, and attitude about evidence based labor and delivery, and clinical practice change will be obtained. Therefore, you are kindly requested to participate in this study and provide the information required. Your participation in this study is completely on voluntary bases and you have a right to refuse, to take part or to stop the giving information at any time. For your participation in the study, no payment will be granted or has no any special privilege to you. Besides, you're not obligated to answer any question which you do not wish to answer. If you fill discomfort to respond to any of the questions, please feel free to drop it any time you wish to do so. I assure you that your name will not be mentioned in anywhere. Filling the questionnaire will take about 30 minutes. The information that you give me will be kept confidential and won't be accessible to a third party; only be used for the research purpose and burnt at the end of the survey.

Could I have your permission to continue?

1. Yes 2. No Stop and thank the respondent.

Witness's signature certifying that the informed consent has been given.

Witness: Signature_____ Dated _____

Data collector: Name_____

Signature _____ Dated_____

Annex three: Questionnaire

Part I: Socio-Demographic Information

Please complete this form if you were providing obstetric services over the last 12 months. Please answer all questions with circling the number in front of the alternatives and/or write additional comments as required.

No.	Questions	Coding categories	Skip to
101	Age	_____ Years	
102	Sex	Female 1 Male 2	
103	Employment status	Full time 1 Part-time 2 Others(specify_____ 5	
104	Profession	Medical doctors 1 Midwife 2 Health officers 3 Nurse 4	
105	Educational qualification	General practitioner 1 Bachelor Degree 2 Diploma 3	
106	Current position	Clinician 1 Both academic and clinician 2	
107	Year of experience	_____(years)	

Part II: Organization related information

No.	Questions	Coding Categories	Skip to
201	Do you have access to a computer at your workplace?	Yes 1 No 2	 203
202	If you say yes to question number 201, for what purpose do you use the computer?(please Circle '1' for 'yes' and '2' to 'no')	Yes No Patient related reading 1 2 To access internet 1 2 For patient data documentation 1 2	
203	Do you have access to internet at your work place?	yes 1 no 2	 211

204	If you say yes to question number 203, what do you search on the internet commonly?	Online journals 1 Social networks 2 Cochrane Database 3 WHO RHL 4	
205	What resources do you use to access health information?	Yes No Scientific journals 1 2 Text books 1 2 Colleagues 1 2 Conferences 1 2	208
206	If you say yes for question number 205, for what purpose you use health information sources? (Please circle 1, 2, as below 1 = Yes 2 = No)	Yes No Patient care 1 2 Teaching 1 2 Research 1 2	
207	What motivates you to seek health information at your work place?(please circle '1' if you say 'yes' and '2' if you say 'no')	Yes No Managerial support 1 2 Scientific meetings 1 2 Skill building workshops 1 2 Cooperation among staff members 1 2 Role clarity 1 2 Patient's condition 1 2 Regular mentorship 1 2	
208	In the past year, have you participated in any of the following professional activities related to your area of work?	Yes No conference/congress 1 2 training on evidence based practice 1 2 seminar 1 2 case study presentation 1 2	
Part III Knowledge related questions			
301	Have you heard about evidence-based Practice?	Yes 1 No 2	304
302	If you answered yes, what do you understand by evidence- based care?	Yes No Patient preference and value based care 1 2 Expert's opinion and experience base 1 2 Research findings based 1 2	

303	Have you ever attended a workshop on evidence based practice?	Yes 1 No 2	
304	Have you ever **heard obstetrical practices** that are beneficial during labor?	Yes 1 No 2	306
305	If yes for question number 305, what **beneficial practices of labor** you have heard?(Please circle as many as you have heard)	Yes No Admission in active labor 1 2 Continuous maternal support 1 2 Allow any position other than supine 1 2 Mobility during normal labor 1 2 Routine use of partogram 1 2 Oral fluids during labor 1 2	
306	Do you know about **non beneficial** practices during labor?	Yes 1 No 2	308
307	If yes for question number 306, What **non-beneficial interventions** you ever heard during labor? (Please circle '1' if your response is 'Yes, '2' for No')	**Yes No** Perineal shaving 1 2 Enema during labor 1 2 Vaginal douching in labor 1 2 Routine amniotomy 1 2 Vaginal packing 1 2 Vaginal examination less than 4hrs 1 2	
308	Do you know about **beneficial practices during delivery**?	Yes 1 No 2	310
309	If you say yes for q.no. 308, **what beneficial practices** do you know?(Please circle '1', for 'Yes', and, 'no' for'2')	Yes No Liberal use of episiotomy 1 2 Individualized cord clamping 1 2 AMSTL 1 2 Perineal support during crowning 1 2	
310	Have you ever **heard practices non-beneficial** during delivery?	Yes 1 No 2	401

311	If you say yes for q.no. 310, **what non-beneficial practices** do you know?(Please circle '1', for 'Yes', and, 'no' for'2')	Yes No Routine uterine manual exploration 1 2 Fundal pressure 1 2 Continous pushing effort during delivery 1 2 Pitocin IV bolus 1 2	
Part IV: Attitude questions			
401	Good communication and support to laboring mother facilitates progress of labor.	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
402	Episiotomy used to expedite delivery in the case of fetal compromise or maternal distress and lack of progress	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
403	Fundal pressure used during the second stage of labour predispose for uterine rupture.	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
404	Enema has no role in progress of labor.	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
405	Intravenous infusions used for laboring mothers as one way of rehydration.	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
406	Active management of third stage of labor prevents post-partum hemorrhage.	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	

407	Frequent vaginal examination predispose to prenatal infection	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
408	Labor and delivery care given based on preference improves clients service seeking.	Strongly agree 1 Agree 2 Neutral 3 Disagree 4 Strongly disagree 5	
Part: V Practice related questions			
501	Ever involved activities to change clinical guideline?	Yes 1 No 2	 502
502	Have you **ever practiced beneficial practices** during labor?	Yes 1 No 2	
503	If yes for question number 502, what beneficial practices of labor you have done before?(Please circle '1' if your response is 'Yes, '2' for 'No')	Yes No Admission in active labor 1 2 Continuous maternal support 1 2 Allow any position other than supine 1 2 Mobility during normal labor 1 2 Routine use of partogram 1 2 Oral fluids during labor 1 2	
504	Have you **ever practiced non beneficial practices** during labor?	Yes 1 No 2	
505	If yes for question number 504, What **non-beneficial interventions** you ever done during labor? (Please circle '1' if your response is 'Yes, '2' for No')	**Yes No** Perineal shaving 1 2 Enema during labor 1 2 Vaginal packing 1 2 Vaginal examination less than 4hrs 1 2	
506	Have you **ever practiced beneficial practices** during delivery?	Yes 1 No 2	
507	If you say yes for q.no. 308, **what beneficial practices** do you	Yes No Liberal use of episiotomy 1 2	

	know?(Please circle '1', for 'Yes', and, 'no' for'2')	Individualized cord clamping 1 2 AMSTL 1 2 Perineal support during crowning 1 2	
508	Have you ever **practiced non-beneficial practices** during delivery?	Yes 1 No 2	
509	If you say yes for q.no. 310, **what non-beneficial practices** do you know?(Please circle '1', for 'Yes', and, 'no' for'2')	Yes No Routine uterine manual exploration 1 2 Fundal pressure 1 2 Continous pushing effort during delivery 1 2 Pitocin IV bolus 1 2	

This is the end of the questionnaire. Thank you very much for taking time to answer these questions.

I appreciate your help. Time of end of the data collection: _____:_____

Hour Minute

Data collector's signature _____ Date _____

Annex four: Declaration

I, the undersigned, senior clinical midwifery student declare that this thesis is my original work in partial fulfillment of the requirement for the degree of Master in clinical midwifery.

Name: _____

Signature: _____

Place of submission: Department of Midwifery, College of Medicine and Health Sciences, University of Gondar.

Date of Submission: _____

This thesis work has been submitted for examination with my/our approval as university advisor(s).

Advisors

Name	**Signature**
_____	_____
_____	_____